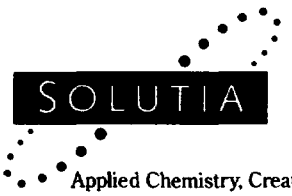

Solutia Inc.
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January 15, 2001

Kevin Turner-Environmental Scientist, OSC
U. S. Environmental Protection Agency
8588 Rt. 148
Marion, IL 62959

Re: Sauget Sites Area I - May 31, 2000 Unilateral Administrative Order
Docket No. V-W-99-C-554
Dead Creek Sediments & Soils Removal / Containment
- **Time Critical Removal Action Work Plan**
- **Response to Comments - Part II - Group II**

Dear Mr. Turner,

On May 31, 2000 the United States Environmental Protection Agency ("U. S. EPA") issued a Unilateral Administrative Order ("Order") to Monsanto Company and Solutia Inc. ("Solutia") requiring removal of soils and sediments from Dead Creek and placement within a containment cell. On June 30, 2000 Solutia submitted for U. S. EPA's approval, a Time Critical Removal Action Work Plan ("TCRAWP") pursuant to the Order. On August 14, 2000, Solutia received your August 10, 2000 letter containing U. S. EPA's comments on the TCRAWP, along with additional comments from the Illinois Environmental Protection Agency ("IEPA"), except for Mr. Robert Watson; Illinois Department of Natural Resources ("IDNR"); and the U. S. Fish and Wildlife Service. Mr. Robert Watson's comments were received by Solutia via email on August 31, 2000.

Pursuant to agreements reached in an October 11, 2000 meeting of all parties to discuss the comments on the TCRAWP, Solutia's Response to Comments - Part I was submitted to the Agencies on October 27. The initial response to comments contained responses to all comments from your August 10, 2000 letter. Response to Comments - Part II was submitted to the Agencies November 3 and contained responses to an agreed-to subset of Mr. Watson's comments, including Solutia's "Group 1" responses and all of Mr. Watson's "musts" comments. Mr. Watson's "musts" list of comments were communicated to Solutia at an October 11, 2000 meeting.

On November 22, 2000, Solutia received comments from Mr. Watson on its Response to Comments - Part II. These comments - which I will refer to as "Group II" - were discussed in a November 29, 2000 conference call involving you and Mr. Watson along with myself, Gary Wantland and Richard Williams. All parties had previously agreed that U. S. EPA approval of Response to Comments - Part II would provide sufficient certainty of the containment cell design to allow completion of a Request for Proposal ("RFP") by Solutia. During the November 29, 2000 call, only the Group II comments judged to most directly affect the containment cell RFP were discussed. These comments were Nos. 12, 24(d, f & g), 57, 61, 78 and 84. At the conclusion of the call, all parties agreed that sufficient understanding and agreement had been reached such that the RFP process could proceed. It was further agreed that Solutia's formal response to the Group II comments would follow at a later date.

In the interim since the November 22 call - in addition to preparation of these Group II Comments - Solutia has prepared and submitted the containment cell RFP to five contractors. Four of the five contractors have indicated they would submit bids. The bids are due back to Solutia on January 22, 2001. After sufficient time for Solutia to review and understand the bids, and following receipt of final U. S. EPA approval of the containment cell design, the containment cell construction contract will be awarded. The selected contractor would then likely require approximately one month to be mobilized to the site.

Response to Comments - Part III will contain responses to all remaining comments from Mr. Watson not already addressed in Response to Comments - Parts I, Part II and Part II - Group II. Response to Comments - Part III will be submitted to U. S. EPA the week of January 15.

Sincerely,

D. M. Light
Project Coordinator
Solutia Inc.

cc: (w/enclosure)

Thomas Martin, Esq. - U. S. EPA
Michael McAteer - U. S. EPA
Candy Morin - IEPA
Robert Watson - IEPA
Linda Tape, Esq. - Thompson Coburn
cc: (w/o enclosure)
Bruce Yare - 6S
Mike Foresman - 6S

Reviewer: Rob Watson
Review Dates: November 22, 2000
Response Date: January 15, 2001

Comments to Monsanto / Solutia

Introduction

On November 3, 2000, Monsanto/Solutia (M/S) submitted additional responses to USEPA's comments made on the Time Critical Removal Work Plan, Dead Creek Sediment and Soil in Sauget and Cahokia. This submittal was Part II of Solutia's response to comments. Part II addressed all of M/S's Group 1 comments and the "must have" comments identified by Rob Watson of IEPA. The following comments identify issues that were not adequately addressed in the November 3, 2000 submittal to the satisfaction of IEPA.

COMMENT	M/S GROUP	EPA/IEPA DISCUSSION OF RESPONSE TO COMMENTS	MONSANTO / SOLUTIA RESPONSE
8	1	The technical data sheets included for Appendix H do not include the height of the textured surface (asperity height) of the HDPE geomembrane as requested in Comment 8.	The required height of the textured surface of the HDPE will be included in the technical data sheets of Appendix H.
11	6 (technically impractical)	At the October 10, 11, 2000 meeting M/S also agreed to place the more highly contaminated material (e.g. Segment B) more to the middle of the fill, not near the bottom or sides. The response does not address this issue.	Monsanto / Solutia agreed that to the extent practicable material would be placed into the cell to prevent damage to the liner system which may include placing certain materials within the center. Due to the nature of the double liner system preventing damage to the liner will provide the highest level of protection to the surrounding soils and groundwater.
12	8	A more legible geologic cross section with all of the information requested in Comment 12 needs to be provided. The colors used to differentiate the geologic strata need to be lighter and the water table should be identified graphically on the cross-section. The information presented in the figure includes a very large distance. Therefore, it is	A more legible geologic cross section will be provided providing better differentiation of the strata and the location of the groundwater. This information will be presented using

COMMENT	M/S GROUP	EPA/IEPA DISCUSSION OF RESPONSE TO COMMENTS	MONSANTO / SOLUTIA RESPONSE
		recommended that the geologic cross section and other information be presented on a full size drawing.	11x17 paper.
20.a, b	5, 6 (technically impractical)	The response to comment 20 needs to indicate when M/S will incorporate the test data into Appendix A of the Design Report.	The requested information will be included in the final version of the design report. The final design report will be issued after EPA / IEPA and Monsanto/ Solutia reach agreement on the responses to the comments.
24.a	4	The narrative in Section 4.2.3 needs to b revised in order to address Comment 24.a and make the section consistent the revised calculations in Appendix C.	The narrative in Section 4.2.3 will be revised to be consistent with the calculations and results in Appendix C of the Design Report.
24.d	3	The narrative in Section 4.2.3 and the calculations in Appendix C (Attachment 10 to the response to comments) both need to be revised in order to clearly identify the minimum factor of safety (FS) against slope failure that will be acceptable. The FS for slope stability at this site should not be less than 1.5. A lower FS will also result in a lower interface friction angle being used in the design.	The calculations for the minimum factor of safety will be revised to reflect the minimum acceptable value of Factor of Safety of 1.5. The narrative in Section 4.2.3 of the Design Report will also be revised to reflect this minimum Factor of Safety value.
24.f	3	The interface friction angle should be determined for more than the two interfaces proposed in the response to comments. This is necessary in order to insure that the worst-case friction angle is in fact determined and accounted for in the design. For example, it is recommended that the soil – GCL and soil – smooth geomembrane interfaces should also be evaluated in the shear box.	Monsanto/Solutia agrees to include the interface friction testing in a shear box of the additional two interface surfaces requested; soil – GCL and soil – smooth HDPE.
24.g	1	It is strongly recommended that testing of the liner materials be performed as soon as the manufacturers of these materials are chosen. This testing would be in addition to, not in place of, the CQA confirmation testing.	The Specifications will be modified to require the contractor to submit the results of the conformance testing early. The specifications will be modified to require the contractor to provide this

COMMENT	M/S GROUP	EPA/IEPA DISCUSSION OF RESPONSE TO COMMENTS	MONSANTO / SOLUTIA RESPONSE
			interface friction data " within 30 days of contract award".
29	7	The wording in Section 4.3.3 needs to be revised to reflect the response to Comment 29 and the provisions in Specification 02200 that address Comment 29.	Section 4.2.3 of the Design Report will be modified to reflect the response to Comment 29 and the modifications made in Specification 02200 regarding bedding material for the synthetic liners.
31	4	The wording in Section 4.4.2 needs to be revised to reflect the key provisions and conclusions in the revised GCL load calculations in Appendix C (Attachment 12) that address the concerns in Comment 31.	Section 4.4.2 of the Design Report will be revised to reflect the revised GCL load calculations and the concerns in Comment 31.
32 all	1, 7, 1, 2, 4, 1, and 2	The narrative in Section 4.5 needs to be revised to include the wording in the response to comments for Comments 32, 33 & 34. Specifically, the narrative needs to refer to the revised drawings and describe how the leachate collection, detection and gravel capillary sump systems will function. Of particular concern is how the procedures and the alarm system will function to insure the level of leachate does not accumulate above acceptable levels.	The narrative of Section 4.5 will be modified to include the wording in the response to Comments 32, 33, and 34. This change will include references to the revised drawings and a description of how the leachate collection, detection and capillary layers will function.
39	3, 4	The proposed wording in Attachment 11 needs to be revised to reference the ASTM method that will be used to test the samples, and the "selected geosynthetics" for which interface friction angles will be determined.	The working of Attachment 11 will be modified to include the reference to ASTM D5321 for the testing of interface friction values for "selected geosynthetics".
40	1	The proposed revision to Section 1.3.B.2 of Specification 01010 is not correct. It needs to indicate that the geotextile will be placed between the tracked in place soil and the capillary break layer (gravel).	This change will be made to Specification 01010.
46.a	7	The wording in Section 3.6.A.4 of Specification 02200 needs to be revised to more clearly describe the filling operations.	The wording of this specification will be modified to more clearly indicate that the requirement limiting the differential

COMMENT	M/S GROUP	EPA/IEPA DISCUSSION OF RESPONSE TO COMMENTS	MONSANTO / SOLUTIA RESPONSE
			elevation of 4 feet in the compacted fill applies to the containment berms and not to any individual lift of placed and compacted soil.
51	1	Specification 02244 needs to be revised to include: yield stress and yield elongation.	These requirements will be included in the specifications.
55	1	The response to Comment 55 does not address the comment that Section 2.1 of Specification 02245 refers to a "lock-stitched" GCL.	References to "locked-stitch" GCL material will be replaced with "needle-punched".
56	1	The minimum values for all of the parameters in Table 1 in Specification 02245 need to be provided in the Table.	The requested values will be provided in the Table.
57	1	The GCL Loading calculations in Attachment 12, and probably the Liner System Stability Calculations in Attachment 10, need to be revised to include the internal friction angle for the GCL.	The GCL loading calculations will be modified to also include consideration of the internal fraction angle of the GCL material.
61	1	The minimum value for transmissivity in Specification 02246 is not acceptable or consistent with other portions of the Design Report, and the units of measurement are not correct. The design report needs to demonstrate that the geonet will have a transmissivity equal to 12 inches of sand with a hydraulic conductivity of 1×10^{-2} cm/sec as stated in Section 4.5.2 (see Comment 35). This is the transmissivity value that should be required in Specification 02246. [An acceptable value for transmissivity is on the order of 1×10^{-4} m^2/sec.] In addition, the narrative in Section 4.1.1 may need to be revised since it states the hydraulic transmissivity of the geonet will be at least 3×10^{-1} cm^2/sec (3×10^{-5} m^2/sec).	The Specification for the geonet will be modified to correctly represent the minimum value of transmissivity required by the calculations. In addition Section 4.1.1 of the Design Report will modified as appropriate.
64/65	7	The narrative in the Design Report should be revised to include the response to Comment 64. For example, Section 3.3 in the revised geonet Specification 02246 still shows that the contractor is responsible for	The narrative in the Design report will be revised to reflect the requirements of the Specifications and the CQA

COMMENT	M/S GROUP	EPA/IEPA DISCUSSION OF RESPONSE TO COMMENTS	MONSANTO / SOLUTIA RESPONSE
		taking confirmation samples. From the response to Comment 64 it appears that the CQA Consultant should perform this job. If this interpretation is correct, Specification 02246 (and portions of other specifications) may also need to be revised.	Manuals.
66	1	The revised CQA manual for geosynthetic materials (Appendix F) should have been provided with the November 3, 2000 submittal. This revised CQA manual needs to be provided for review before the Design Report is finalized.	The revised CQA Manual for geosynthetic materials will be included in the final submittal of the Design Report.
68	1	The Table in Attachment 23 needs to be revised to include the following properties, their test methods, and minimum values: Geomembrane: yield strength, yield elongation, and asperity height, GCL: grab tensile strength. The minimum values for some of the parameters on this table may also need to be revised based on earlier comments in this review (e.g. transmissivity for the geonet, and the minimum internal friction angle for the GCL).	These values will be included in the referenced Table. The minimum values for these materials will be modified as appropriate.
74	1	The revised CQA manual for soil materials (Appendix G) should have been provided with the November 3, 2000 submittal. This revised CQA manual needs to be provided for review before the Design Report is finalized.	The revised CQA Manual for geosynthetic materials will be included in the final submittal of the Design Report.
78	1	The response to this comment only addresses the testing of borrow soils for TCL/TAL constituents. It does not address the requirement to analyze soils per the referenced USEPA guidance document. Therefore, the parameters and their frequencies are specified below. [See copies of Tables 2.3 and 2.10 from USEPA Technical Guidance Document titled Quality Assurance and Quality Control for Waste Management Facilities (EPA/600/R-93/182, September 1993).] The soils identified in Tables 1A and 1B in Attachment 24 should be analyzed for the following parameters at the specified frequencies:	Revisions to these tables will be made to reflect the intent of the USEPA guidance document. Final versions of the tables will included in the Design Report.

COMMENT	M/S GROUP	EPA/IEPA DISCUSSION OF RESPONSE TO COMMENTS	MONSANTO / SOLUTIA RESPONSE
		• Moisture Content: 1 test per 2,500 cu yd or each change in material. • Atterberg Limits: 1 test per 6,500 cu yd or each change in material. • Percentage Fines: 1 test per 6,500 cu yd or each change in material. • Percent Gravel: 1 test per 6,500 cu yd or each change in material. • Compaction Curve: 1 test per 6,500 cu yd or each change in material. • Hydraulic Conductivity: 1 test per 13,000 cu yd or each change in material. The soils identified in Tables 1C in Attachment 24 should be analyzed for the following parameters at the specified frequencies: Field Placed Moisture and Density (rapid tests): 5 tests per acre per lift. Water Content (ASTM D2216): one in every 10 rapid moisture content tests. Total Density (ASTM D1556, 1587, or 2167): one in every 20 rapid density tests.	
82	2	The narrative in the Design Report needs to be revised to include the response to Comment 82.	Solutia will address the O&M issues for this facility in the O&M Plan. As previously agreed this plan will be submitted 60 days after the completion of construction.
84	2	The response did not fully address the issues in Comment 84. Each of the items in Comment 84 needs to be addressed individually. In addition, the response needs to indicate if the concrete down shoot (and the calculations for it in Appendix D) need to be removed from the application.	The run off control system was revised to incorporate the comments of EPA /IEPA. The revised design will be included in the final Design Report.